

apricot

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SETUP

Introduction

The Apricot LS Pro system board is fitted with a small area of memory which is used to store information about the configuration of the computer. The computer's configuration is modified using a SETUP utility provided in Read Only Memory (ROM) on the system board.

A rechargeable battery on the system board maintains the configuration memory when the LS Pro is switched off.

Invoking SETUP

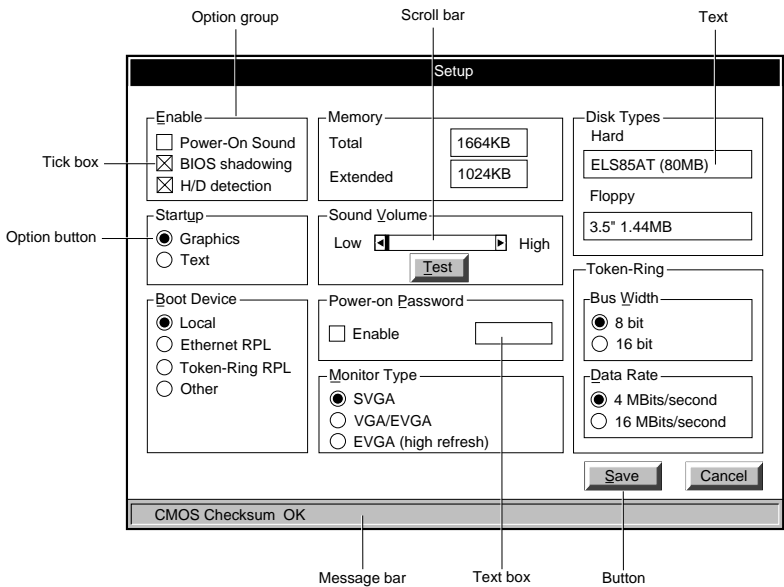
Each time the LS Pro is switched on, or rebooted, it runs through a self test procedure. During this period the SETUP utility can be invoked by pressing the `ALT+S` key combination.

The LS Pro can boot in two ways, it can use a graphical boot screen, or a conventional text based boot screen. During graphical boot a Setup button is displayed, SETUP can only be invoked while the button is not greyed out. During text boot a prompt appears on the screen, while the prompt is visible SETUP can be invoked.

There may be a delay of a few seconds, while the self test procedure is completed, before the SETUP screen appears.

The SETUP screen

The simplest way to use SETUP is with a mouse, just move the cursor to the option you want to select and click with the left mouse button. The illustration below identifies the elements that make up the SETUP screen.



Option group

These are used to collect a number of related, or exclusive, options under a common heading.

Check box

Check boxes are used where any number of the options in the group may be selected. Select or de-select a check box by pointing and clicking in the box with the mouse.

Option button

These are used for exclusive options. Beside each option is a circle, only one circle is highlighted at any given time. If you point and click on an option the highlight will transfer to it.

Scroll bar

Scroll bars behave like slide controls. They are adjusted by pointing and clicking on the arrows at each end of the bar.

Text box

These are provided when the user has to enter text. Point and click in the text box, then enter the text required and press ENTER.

Text

The SETUP utility displays some information about your system that is detected automatically and cannot be altered. For example, the amount of memory installed in the system is detected and displayed, for information only.

Buttons

Buttons carry out the action indicated by the text on the button.

Message line

A message line at the bottom of the screen contains information about SETUP.

Greyed out options

Where an option is greyed out it indicates that it cannot currently be selected, or used. There could be a variety of reasons for this, for example: the computer may not support the option, or an associated option may have to be enabled in order for the greyed out option to be valid.

Controlling SETUP using the keyboard

If you are unable to use a mouse, you can use the keyboard to move around and select the SETUP options.

TAB	Moves you round the option groups, and buttons. An alternative method is to hold down the ALT key and press the letter which corresponds to the one underlined in the title of the group
ARROW KEYS	Once you are in an option group, use the arrow keys to move through the options. The system will highlight an entry to show which option is currently selected.
SPACE BAR	Press the space bar to set the highlighted option.
ENTER	Confirms SAVE or CANCEL buttons.

When the changes are complete, select the **SAVE** button and press **ENTER**. To abandon your changes, select the **CANCEL** button and press **ENTER**.

System Autoconfiguration

If the system configuration has changed since the last time the computer was booted, SETUP will be invoked automatically. The changed item will be shown in the message line; you then merely need to confirm by clicking on the **SAVE** button.

SETUP functions

Enable

Power-On Sound

When this option is enabled the LS Pro audio subsystem provides an audible indication that the system has been switched on.

BIOS shadowing

Enabling BIOS shadowing enhances the performance of the system by copying the BIOS into RAM.

The BIOS on the system board is stored in ROM, which has long access times, and only an 8-bit wide interface to the rest of the system board. By copying the BIOS into RAM the system takes advantage of the inherently faster access times of RAM, and a 16-bit wide interface, to enhance performance.

When BIOS shadowing is disabled, an additional 384 Kbytes of extended memory is available. Unless you have a specific need for the extra 384 Kbytes it is recommended that you enable BIOS shadowing.

H/D detection

When this check box is enabled the system automatically detects the type of hard disk fitted. It must always be enabled in systems equipped with a hard disk drive. If it is disabled the system will not recognise its hard disk drive.

In floppy only and diskless systems this check box should be disabled. With the hard disk detection disabled, systems without hard disk drives will boot faster as the BIOS skips the hard disk detection code.

Startup

Graphics

When graphics is selected the initial boot screen is displayed in graphical format. If graphics is not selected the smooth boot option in Enable is greyed out.

Text

When text is selected a text based boot screen is used.

Monitor type

There are three option buttons in this group: SVGA, VGA/EVGA and EVGA (high refresh). The three options alter the timings of video signals provided by the LS Pro video connector to suit a variety of different types of monitor.

It is important to ensure that you have made the correct selection.

SVGA

This option should be chosen for SVGA monitors. These are monitors that support 800x600 non-interlaced and 1024x768 interlaced video modes in addition to standard VGA modes.

VGA/EVGA

This option should be chosen for VGA monitors, and for EVGA monitors to run at normal refresh rates, typically 60Hz. EVGA monitors support 800x600 and 1024x768 non-interlaced video modes in addition to standard VGA modes.

VGA monitors will not display resolutions greater than 640x480 correctly.

EVGA (high refresh)

This option can be used if your EVGA monitor supports high refresh rates. If this option is chosen: 640x480, 800x600 and 1024x768 display modes use high refresh rates, typically 72Hz.

The video timings in these high refresh rate modes are VESA compatible. Some monitors which are capable of displaying these modes may need the CVSHELL utility supplied on the Apricot Drivers disks to adjust the position of the display on the screen.

VGA and SVGA monitors will not work if this option is selected.

Video modes

The LS Pro system board video adapter can generate a wide variety of video outputs. In addition to standard VGA modes it supports a number of enhanced modes.

In order to display these enhanced modes correctly you must ensure that the correct monitor type is selected. Selecting the wrong monitor type could result in nothing being displayed.

To take advantage of these modes suitable display drivers must be used. A set of drivers for popular applications is supplied with your computer. Installation instructions are provided in help files supplied with the drivers.

Memory

The memory text box displays a count of the amount of memory installed in the system. The contents of the text box cannot be edited and is displayed for information only.

Separate counts of total and extended memory are displayed.

Sound

The Sound option group is greyed out unless the Power-On Sound is enabled.

Volume

The volume control adjusts the output level of the Power-On Sound. Use it to adjust the volume to suit the computer's location.

Test

Use the Test button to preview the Power-On Sound to ensure that you have set it to a suitable level.

Set Power-on Password

The LS Pro supports a power-on password. If enabled this password must be entered every time the system is powered up or rebooted. If you have Apricot LOC Technology enabled the power on password cannot be used.

When the power-on password is enabled the text box can be selected and a password entered. The password has a minimum length of 1 character and a maximum length of 7 characters.

Boot device

The boot device option group allows you to select where you want the LS Pro to look for an operating system when it is switched on or rebooted. The group contains four option buttons, these choose between booting from a hard or floppy disk in the computer, and remotely across different types of network.

If you make an inappropriate selection it may result in the computer failing to find an operating system and being unable to boot.

Before selecting a remote boot option check with your network administrator.

Local

This should be selected if the computer is to boot from an internal hard disk or floppy drive.

It should be noted that when one of the remote boot schemes described below is enabled it is not possible to boot the computer from a local device. If you wish an LS Pro that normally boots remotely to boot from a local device, you must first use SETUP to select Local in the boot device option group.

Ethernet RPL

If the computer is connected to an Ethernet network, and it is to boot remotely from a server using the RPL (Remote Program Load) scheme, enable this option.

Token-Ring RPL

Only if the computer has a Token-Ring module fitted, with a remote boot (RPL) ROM installed is this option available. Under these circumstances, if the computer is connected to a Token-Ring network, and it is to boot remotely, enable this option.

Other

This option is provided for possible future implementation of other remote boot methods. It is currently greyed out.

Disk Types

Hard disk

The hard disk type is detected automatically. This text box is used to display the type of hard disk installed, if any.

Floppy disk

The LS Pro can be fitted with a 1.44 Mbyte 3.5 inch floppy drive. If a drive is fitted it is detected automatically. This text box is used to display whether a floppy is fitted or not.

Token-Ring

If you have a Token-Ring module fitted, then these options enable you to set the bus width and ring data rate.

Note

Full definitions of bus width and the ring data rate are given in Appendix B of the LS Pro Owner's Handbook.

This part of the SETUP utility is greyed out on when the Token-Ring module is not installed.

Bus width

The Token-Ring module can use either an 8-bit or a 16-bit wide interface to the system board. SETUP defaults to an 8-bit interface.

The 16-bit interface provides significantly better performance and should be used when running network software such as Novell NetWare or Microsoft LAN Manager. However certain network software may require the 8-bit interface.

Data rate

The Token-Ring module supports a ring data rate of either 16Mbit/s or 4Mbit/s. The data rate can be configured either by a switch on the module, or through SETUP.

If the switch on the module is set to 16Mbit/s the ring data rate is software selectable, and the data rate options in SETUP are enabled. If the switch on the module is set to 4Mbit/s the ring data rate cannot be altered by software and the data rate options are greyed out.

Before connecting the LS Pro to a Token-Ring network check the ring data rate of the network with your network administrator and make the appropriate selection.

If your LS Pro is connected to a 4Mbit/s network you may wish to have the switch in the 4Mbit/s position to ensure that the 16Mbit/s ring data rate is not selected inadvertently.

Exiting SETUP

Use either the **SAVE** or **CANCEL** button to exit SETUP.

The **SAVE** button will implement any changes that you, or autoconfiguration, have made. If you use the **SAVE** button you will be prompted to make sure that you wish to implement the changes.

The **CANCEL** button exits SETUP without implementing any changes.

Installing add-ons

Introduction

Warning

Never carry out any work on the equipment with power applied. Always switch off at the mains and remove the power lead from the equipment before starting work.

This guide contains instructions on installing memory upgrades, an 80387SX coprocessor, a thick wire Ethernet module and a Token-Ring module RPL ROM. This document should be your only source of information when installing any of these.

Read this document before purchasing any upgrades. If, having read the relevant instructions, you are not confident about installing the upgrade, you may wish to have your supplier or service organisation install it for you.

Before you start installing the upgrade you should be thoroughly familiar with all the relevant instructions in this guide and the appropriate sections of your *Owner's Handbook*.

At the rear of this guide is some information about a Token-Ring module upgrade, and a list of the SIMMs that are approved for use with the Apricot LS Pro.

Anti-static precautions

All electronic components and equipment are sensitive to static electricity. Even small electrostatic discharges can render components useless or severely shorten their working life, therefore you should always take preventive measures.

No work should be carried out on any item unless it is in a Special Handling Area (SHA) as defined in BS CECC 00015:Part 1. In general this involves:

- * a common earth point
- * an earthed bench or bench mat
- * an earthed wrist strap

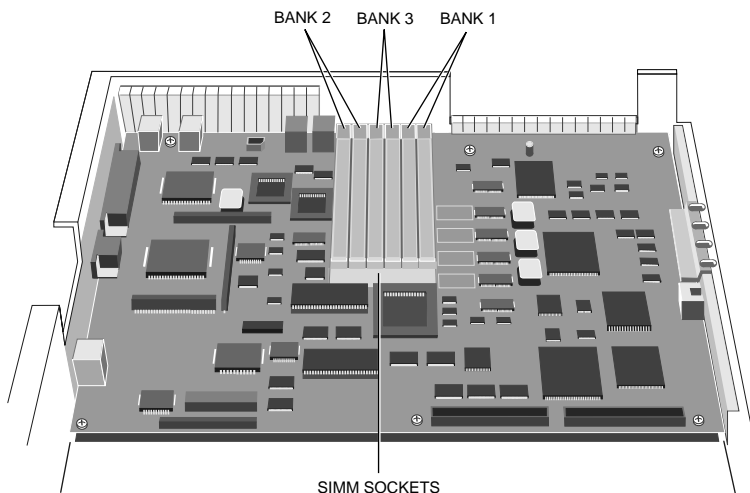
Memory upgrades

Memory on the Apricot LS Pro can be expanded to a maximum of 16 Mbytes by fitting SIMMs (Single In-line Memory Modules) in sockets provided on the system board.

The SIMM sockets are grouped in pairs, which correspond to blocks of memory known as banks. Four banks (banks 0 to 3) are supported.

During manufacture 2 or 4 Mbytes of RAM is soldered to the system board. When 2 Mbytes of RAM is installed only bank 0 is occupied and six SIMM sockets are fitted. When 4 Mbytes of RAM is installed banks 0 and 1 are occupied, and four SIMM sockets are fitted.

Apricot memory upgrades are supplied as pairs of SIMMs, with upgrades of 2 and 8 Mbytes available. The illustration below identifies the SIMM sockets and banks:



Note

When 4 Mbytes of RAM is soldered to the system board during manufacture the SIMM sockets for bank 1 are not fitted.

The following table identifies the valid upgrade combinations.

System board capacity (Mbytes)	Upgrade to (Mbytes)	Bank			Note
		1	2	3	
		(Mbytes)			
2	4	2	-	-	
2	6	2	2	-	
2	8	2	2	2	1
2	12	2	8	-	
2	16	-	8	8	2
4	6	N/A	2	-	
4	8	N/A	2	2	1
4	12	N/A	8	-	
4	16	N/A	8	8	2

Notes

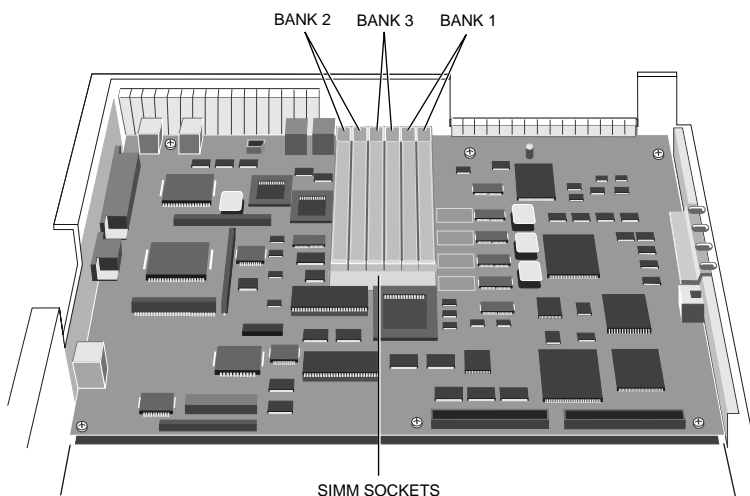
1. *For a 2 Mbyte system board an alternative method of achieving 8 Mbytes of RAM is to install an 8 Mbyte upgrade in bank 2 and leave the other banks empty. This configuration disables the RAM soldered to the system board.*
2. *When banks 2 and 3 are both occupied by 8 Mbyte upgrades the RAM soldered to the system board is disabled.*

Installation

In order to install a memory upgrade you must:

1. Take suitable anti-static precautions as described earlier.
2. Obtain access to the system board as described in your *Owner's Handbook*.

The SIMM connectors are located on the right side of the system board just behind the floppy drive bezel as shown in the illustration below.



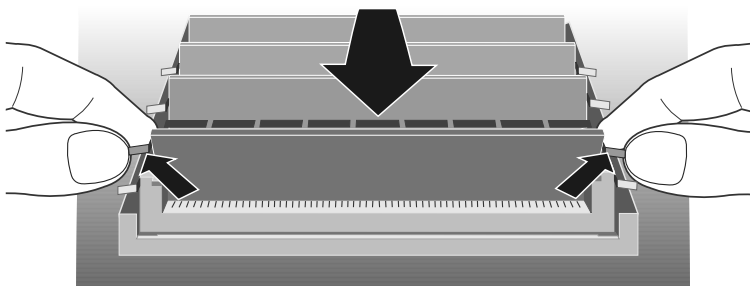
Note

When removing and installing SIMMs it is easiest to work with the rear of the system unit towards you. As a result the following instructions assume that you are viewing the system unit from the rear.

Removing SIMMs

If you wish to install an upgrade in a pair of SIMM sockets which are already occupied you must first remove the existing SIMMs. Starting with the SIMM nearest the rear of the system unit and working towards the front:

1. Lever the metal clips on each side of the socket gently away from the SIMM using your thumbnails. When the clips are far enough apart the top edge of the SIMM will move backwards until the SIMM is at an angle of about 15°.



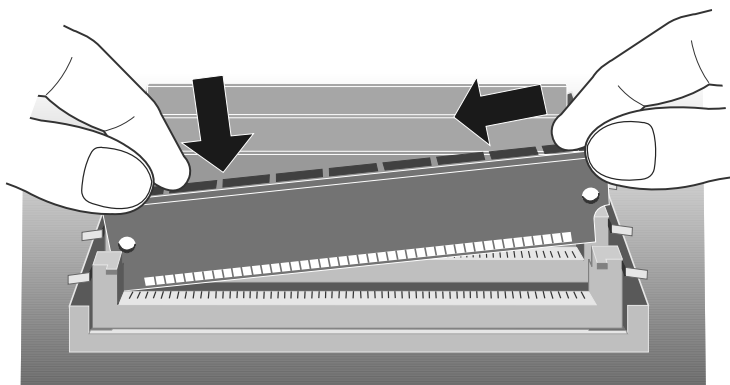
2. Taking care to avoid touching any of the components on the SIMM grip the top corners of the SIMM between thumb and first finger and carefully pull the SIMM out of the socket.
3. Repeat steps 1 and 2 for the other SIMM(s) affected.

Inserting SIMMs

From the table of possible SIMM combinations decide which SIMM capacity will be installed in each bank. Then, working from the socket nearest the front of the system unit towards the rear, install the SIMMs.

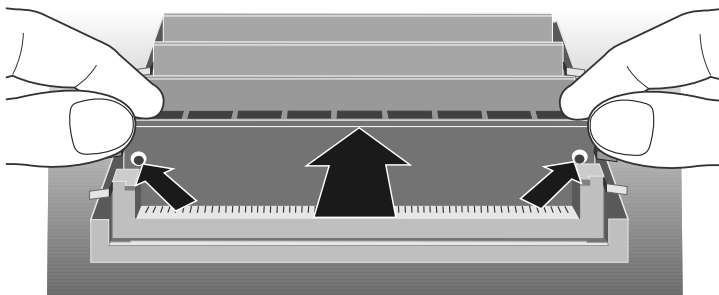
To fit a SIMM:

1. Hold the SIMM so that the memory chips are facing the front of the system unit with the connector nearest the system board.
2. Position the SIMM above the socket at an angle of about 15° to the vertical.



3. Lower the SIMM towards the socket. The right edge of the SIMM will be prevented from reaching the connector by the securing clip.
4. Allow the left edge of the SIMM to drop into the connector.
5. Push the SIMM gently to the right and lower the right edge into the connector.
6. Ensure that the SIMM is properly located in the connector.

7. Rotate the SIMM into the vertical position by pushing gently on the top corners.

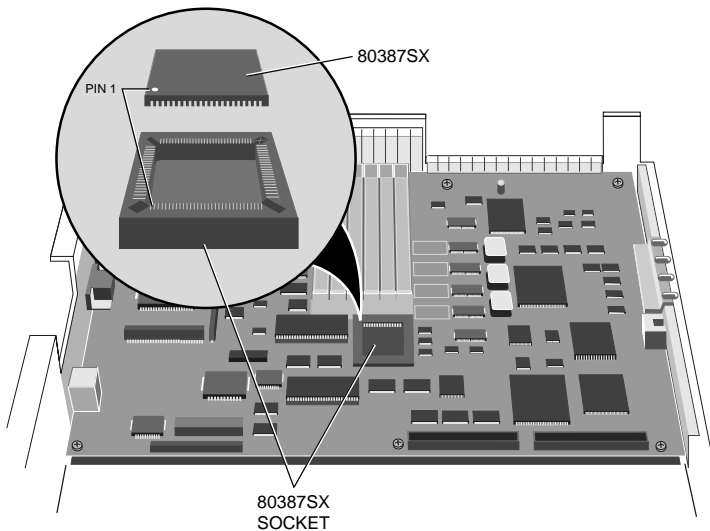


8. If the SIMM is properly located the SIMM should remain in position held by the securing clips, and with a small plastic lug through the holes on either side of the SIMM.

Repeat this process for the remaining SIMMs and reassemble the system. The next time you power the system up the SETUP utility will be invoked automatically, autoconfiguration is described in your *Owner's Handbook*.

Installing an 80387SX

1. Take suitable anti-static precautions, as described earlier.
2. Obtain access to the system board as described in your *Owner's Handbook*.
3. Identify the 80387SX socket and locate pin 1 on the system board as shown in the following illustration.



4. The 80387SX has a positioning guide in the form of a circular recess. Carefully insert the 80387SX in the socket with the positioning guide at pin 1 making sure that you do not bend or otherwise damage the pins.

Note

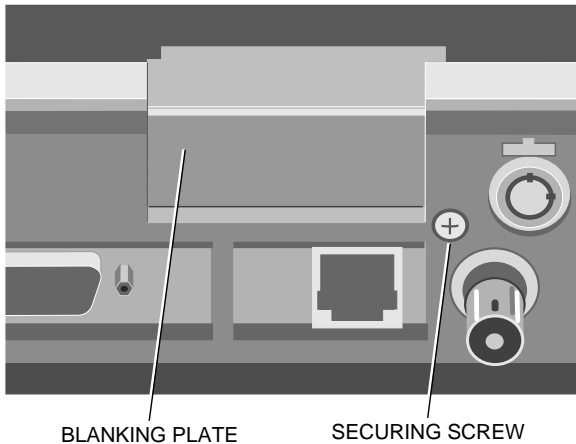
The 80387SX only fits in one orientation. Do not use excessive force or damage may occur.

5. Reassemble the system.

Thick wire Ethernet

The Apricot LS Pro can be fitted with a thick wire Ethernet assembly. If you bought an LS Pro without a thick wire Ethernet assembly you can install one as follows.

1. Take suitable anti-static precautions, as described earlier.
2. Obtain access to the system board as described in your *Owner's Handbook*.
3. Identify the system board socket for the thick wire Ethernet assembly, and the blanking plate in the rear panel of the system unit from the illustration below:

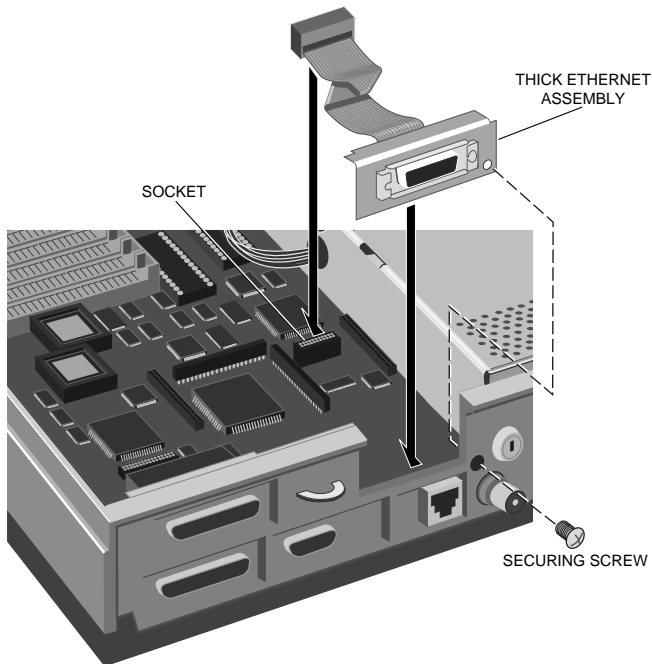


4. Remove the screw that secures the blanking plate, and lift the blanking plate clear of the system unit.

5. Lower the thick wire Ethernet assembly into place as shown in the following illustration, and secure it with the screw that secured the blanking plate.

Note

The thick wire Ethernet connector mounting plate must be touching the inside of the system unit plastics.



6. Plug the connector on the assembly into the system board socket identified earlier.
7. Ensure that the Ethernet selection switch is in the correct position for the network cabling that you wish to connect it to, refer to the label on the inside of the system unit cover.
8. Reassemble the computer.

Token-Ring RPL ROM

The LS Pro Token-Ring network module has a socket for an RPL (Remote Program Load) ROM. With the ROM installed the computer has the ability to remote boot. Information about remote booting is included in your *Owner's Handbook*.

Note

If your LS Pro is equipped with a Token-Ring network module it may already be fitted with an RPL ROM.

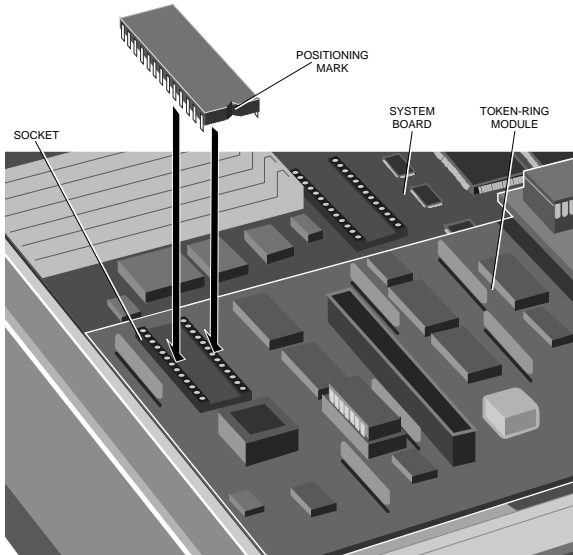
Installation

To fit a Token-Ring RPL ROM in an LS Pro:

1. Take suitable anti-static precautions as described in your *Owner's Handbook*.
2. Obtain access to the system board as described in your *Owner's Handbook*.
3. Identify the Token-Ring module. It is at the rear of the system unit, above the system board.

The ROM chip has a positioning notch which must correspond with the positioning guide on the socket.

4. Identify the RPL ROM socket and its positioning guide as shown in the following illustration.



5. Open the protective case which contains the ROM chip and pick up the chip taking care not to touch any of the pins.
6. Carefully insert the ROM in the socket with the positioning notch above the guide in the socket.

Warning

Make sure that you do not bend or otherwise damage the pins of the chip and that you do not apply excessive pressure to the Token-Ring module.

7. Reassemble your computer.

With the RPL ROM installed and the Token-Ring RPL Boot Device option selected in SETUP, the LS Pro is ready to remote boot. However, before the remote boot process will operate, your network administrator will have to reconfigure the network operating system.

Token-Ring module

If your LS Pro was not fitted with a Token-Ring module and you wish to connect it to a Token-Ring network, your supplier or service organisation can install the module for you.

Note

If your LS Pro has a thick wire Ethernet assembly installed the Token-Ring module will replace the thick wire Ethernet module.

Approved SIMMs

The Apricot LS Pro system board uses pairs of standard 9-bit, 1 or 4 Mbyte, 60nS SIMMs. The following list identifies the SIMMs that have been tested and approved for use in LS Pro by Apricot.

Capacity	Manufacturer	Part No.
1 Mbyte	Goldstar	GMM-791000NS-60
1 Mbyte	Micron Technology	MT 3D19-6
1 Mbyte	Toshiba	THM9107OBS-60
1 Mbyte	Toshiba	THM9107OBS-50
4 Mbyte	Goldstar	GMM-794000S-60
4 Mbyte	Toshiba	THM9400OBS-60
4 Mbyte	Toshiba	THM9400OBS-50

Warnings

- 1. SIMMs not included in the list above cannot be guaranteed to operate correctly in the LS Pro.*
- 2. SIMMs with gold edge connectors must not be used in the LS Pro.*

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